

I. THE OFFICE ACTION FAILS TO ESTABLISH A *PRIMA FACIE* CASE OF OBVIOUSNESS OVER US011

The Office Action fails to establish a prima facie case of obviousness because US 011 fails to teach or suggest every feature of claims 1, 3-10, 13-15, 17, 19, 20, 22, 24, 25, 40-50. Specifically, US 011 fails to teach or suggest the claim limitation: "saturation sublimation pressure state."

Claim 1 recites: "A modification method of the surface layer of a molded resin article which comprises the steps of: ... bringing the clothed space to a saturation sublimation pressure state of the organic compound ..." (emphasis added). Claims 3-10, 13-15, 40-50, and 53-57 depend from claim 1 and include all of its features.

Claim 17 recites: "A modification apparatus for the surface layer of a resin which comprises: a tightly closable container...and the molded resin article in a saturated sublimation pressure state of the organic compound; ..." (emphasis added). Claims 19 and 20 depend from claim 17 and include all of its features.

Claim 22 recites: "A coloring apparatus for the surface layer of a molded resin article which comprises: a tightly closable container...and the molded resin article in a saturated sublimation pressure state of the dye stuff; ..." (emphasis added). Claims 24 and 25 depend from claim 22 and include all of its features.

US 011 is directed to protecting plastics from photodegradation by exposing plastics to an atmosphere of an anti-UV agent in vapor state prior to exposure to solar radiation. See the abstract. However, US 011 fails to teach or suggest that the vapor deposition of the organic compound is maintained at a constant temperature with the temperature of the substrate, and thus US 011 fails to teach or suggest the "saturation sublimation pressure state" limitation of independent claims 1, 17, and 22.

For at least these reasons, the Office Action fails to establish a *prima facie* case of obviousness because US 011 fails to teach or suggest the "saturation sublimation pressure state" limitation of claims 1, 3-10, 13-15, 17, 19, 20, 22, 24, 25, 40-50, and 53-57.

Accordingly, claims 1, 3-10, 13-15, 17, 19, 20, 22, 24, 25, 40-50, and 53-57 would not have been obvious over US 011, and are thus patentable over US 011. Reconsideration and withdrawal of the rejection are respectfully requested.

II. THE UNEXPECTED RESULTS ACHIEVED BY THE SATURATION SUBLIMATION PRESSURE STATE OVERCOMES ANY *PRIMA FACIE* CASE OF OBVIOUSNESS OVER US011

The specification discloses that in conventional vapor deposition methods, the temperature of the vapor deposition source is set to be higher than the temperature of the substrate (i.e., the substrate to which the vapor is to be applied). See the specification at p. 4, lines 19-23. The specification defines these type of conditions (i.e., a vapor deposition method in which the temperature of the vapor deposition is higher than the temperature of the substrate) as non-equilibrium conditions, and discloses that it is difficult to obtain uniform thickness of the vapor film on the substrate under non-equilibrium conditions. See p. 5, lines 5-7.

Applicants have discovered that saturated sublimation pressure conditions unexpectedly overcome these deficiencies of the non-equilibrium conditions of conventional vapor deposition methods. In particular, the specification discloses that saturated sublimation conditions are conditions in which the vapor deposition of the organic compound is maintained at a constant temperature consistent with the temperature of the substrate. See the specification at p. 8, line 21 to p. 9, line 6. In contrast to the non-equilibrium conditions of conventional vapor deposition methods, the claimed saturated sublimation pressure state allows for the uniform application of the vapor deposition on the substrate. In other words,

the claimed saturated sublimation pressure state allows for a uniform thickness of the vapor film on the substrate.

The Advisory Action argues that US 011 discloses heating the organic compound in a first temperature range, pre-heating the substrate in a second temperature range, and that the two temperature ranges overlap. The Advisory Action further argues that this overlap suggests heating the substrate and the vapor at the same temperature so as to achieve a saturated sublimation pressure state.

As discussed above, the Office Action fails to establish a *prima facie* case of obviousness because US 011 fails to teach or suggest the claimed "saturation sublimation pressure state." However, even if the Office Action established a *prima facie* case of obviousness (which it has not), a showing of unexpected results is sufficient to overcome a *prima facie* case of obviousness. See, for example, *In re Albrecht*, 514 F.2d 1389, 1396, (CCPA 1975), *In re Papesch*, 315 F.2d 381 (CCPA 1963) and MPEP §§716.02-716.02(g).

The attached Declaration discloses experiments directly comparing articles prepared under saturated sublimation pressure conditions with articles prepared under conventional conditions. In particular, the Declaration demonstrates that for articles prepared under saturated sublimation pressure conditions, the vapor is uniformly deposited on the article. The Declaration further demonstrates that for articles prepared under non-equilibrium conditions, the vapor is not uniformly deposited. These experiments demonstrate the unexpected benefits of saturated sublimation pressure conditions, which are not taught or suggested by US 011.

For at least these reasons, any *prima facie* case of obviousness over US 011 is rebutted by the unexpected results demonstrated by the experiments disclosed in the attached Declaration. Accordingly, for this additional reason, claims 1, 3-10, 13-15, 17, 19, 20, 22, 24,

25, 40-50, and 53-57 would not have been obvious over US 011, and are thus patentable over US 011. Reconsideration and withdrawal of the rejection are respectfully requested.

III. CLOSING

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 3-10, 13-15, 17, 19, 20, 22, 24, 25, 40-50 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,


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JAO:PAC

Attachment:

Declaration Under 37 CFR §1.132 of T. Mizokuro

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